Enfermería Global
ISSN 1695-6141
Revista electrónica trimestral de Enfermería
Nº72
Octubre 2023
www.um.es/eglobal/

ORIGINALES

# Health perception among older adults according to lifestyle and functional capacity

## Percepción de la salud entre los adultos mayores según estilo de vida y capacidad funcional

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https://doi.org/10.6018/eglobal.559401

Received: 3/08/2023
Accepted: 18/04/2023

## ABSTRACT:

**Objectives:** To know the self-perceived health, lifestyle, functional capacity and relationship between them, in a group of older adults from a rural primary healthcare center.
**Methods:** Cross-sectional observational study. The participants filled out a questionnaire made up of sociodemographic, clinical, socio-family support data, linked to COVID-19 and 5 scales: MEDAS-1, RAPA, Barthel, SARC-F and SF-36. The variables were analyzed through hypothesis contrasts and Pearson's coefficient, considering statistical significance with $p<0.05$.
**Results:** The sample consisted of 142 older adults, with an average age of 75.85 years. Most of them were married, had primary education, were not caregivers, did not have toxic habits, were polymedicated, took psychotropic drugs, and were not afraid of COVID-19. The sample had a normal weight overall, 48.6% demonstrated high adherence to the Mediterranean Diet (MD), 35.9% were moderately active, 54.9% indicated independence for basic activities of daily living (BADL), and 75.4% showed low risk of sarcopenia. The sample's perception of health was lower in most of the SF-36 subscales analyzed than that of the reference population, being lower in women and with increasing age. Older adults with low adherence to MD, sedentary, dependent, and with sarcopenia showed a lower perception of health. Participants with low adherence to the MD were more sedentary and those who were more dependent had a higher risk of sarcopenia.
Conclusions: an inadequate lifestyle and functional limitation significantly reduce the self-perception of health, requiring intervention to correct them.

**Key words:** Aged; Self-Perceived Health; Healthy Life Style; Functional Capacity; Sarcopenia.

## RESUMEN:

**Objetivos:** Conocer la salud autopercibida, estilo de vida, capacidad funcional y relación existente entre ellas, en un grupo de adultos mayores de un centro de atención primaria rural.
**Métodos:** Estudio observacional transversal. Los participantes diligenciaron un cuestionario compuesto por datos sociodemográficos, clínicos, de apoyo sociofamiliar, ligados al COVID-19 y 5 escalas: MEDAS-1, RAPA, Barthel, SARC-F y SF-36. Las variables se analizaron mediante contrastes de hipótesis y coeficiente de Pearson, considerando la significación estadística con un $p<0.05$.
**Resultados:** La muestra se conformó por 142 adultos mayores, con una edad media de 75.85 años. La mayoría estaban casados, tenían estudios primarios, no eran cuidadores, no tenían hábitos tóxicos, estaban polimedicados, tomaban psicofármacos y no padecían temor ante el COVID-19. La muestra presentó globalmente normopeso, el 48.6% demostró una adherencia alta a la Dieta Mediterránea (DM), el 35.9% eran moderadamente activos, el 54.9% indicaron tener independencia para las ABVD y el 75.4% mostraron bajo riesgo de sarcopenia. La percepción de la salud de la muestra fue inferior en la mayoría de las subescalas analizadas del SF-36 que la de la población de referencia, siendo inferior en mujeres y conforme avanza de la edad. Los adultos mayores con baja adhesión a la DM, sedentarios, dependientes y con sarcopenia mostraron inferior percepción de salud. Los participantes con baja adhesión a la DM eran más sedentarios y los más dependientes tenían más riesgo de sarcopenia.
**Conclusiones:** Un estilo de vida inadecuado y la limitación funcional reducen significativamente la autopercepción de la salud, debiendo intervenir para corregirlas.

**Palabras clave:** Adulto Mayor; Salud Autopercibida; Estilo de Vida Saludable; Capacidad Funcional; Sarcopenia.

# INTRODUCTION

### Background and current state of the subject

The increase in life expectancy and the low birth rates in many countries are causing an accelerated growth in the percentage of older people [1,2]. According to the World Health Organization (WHO), between 2000 and 2050, the proportion of the planet's inhabitants over 60 years of age will double from 11% to 22% [1,2]. Aging implies physical, psychological or social changes, which together with changes in lifestyle, mean that a longer life expectancy is not accompanied by a better quality of life [1,2]. Currently there are different ways of measuring the state of health of people; the “proven health”, the “observed health” and the “perception of health”, which is referred to by the people themselves, based on their knowledge, beliefs and personal expectations [3]. Today, the perception of health is considered a simple, but very complete measure to assess health, being a valid, relevant, unique and invaluable indicator of a person's global health status [3].

It has been shown that self-perception of health is a good predictor of quality of life, well-being, and health; in addition, in adults, it is an important predictor of life expectancy, morbidity and mortality, and the use of healthcare services[4,5]. As a reflection of all this, various experts and organizations such as the WHO recommend including it as a health indicator in studies and surveys [1,3,4].

There is wide evidence in the scientific literature about the relationship between self-perception of health with a wide range of demographic, health, socioeconomic, psychosocial factors, etc. [3-7]. Married people, with higher levels of education, with a higher economic status, with an optimal family/social relationship and without comorbidities tend to report good self-assessed health [3,5-7], on the contrary, it has

been seen that when suffering from chronic diseases or disability, the reported perception of health tends to be lower [3,5-9].

On the other hand, it is of special interest to mention the association found by several authors between perceived health and eating habits, exercise or the Body Mass Index (BMI), observing that obesity, a deficient diet or physical inactivity are associated with a worse self-perceived state of health [4-8].

Bearing in mind that the perception of health is a multidimensional concept, various instruments have been designed for its evaluation [8-10], with the Short-Form 36 Health Survey (SF-36) being one of the most widely used validated instruments. in Spain based on its good psychometric properties, being quite useful for evaluating the self-perception of health in the elderly in Primary Care [8-10].

It is well established that a balanced diet is a key element to achieve healthy aging [8,11], today it is known that the Mediterranean Diet (MD) is the prototype of a healthy diet: it is varied, balanced and moderate [4,8,11].

Several studies have evaluated the association between MD and health status, highlighting among them the PREDIMED-1 trial, concluding that MD is associated with reduced mortality, longer life expectancy, and better quality of life [12]. however, it has been observed that its adherence among the elderly population is decreasing, favoring the development of non infectious diseases (NIDs) [11-13]. Given the MD-health binomial, various tests have been published to assess its adherence, such as the MEDAS-17, a test based on another already validated 14-item test (PREDIMED-1) used in the PREDIMED-PLUS trial. This version adds 3 items that reflect the caloric restriction to be applied to the MD to lose weight [13].

Together with MD, Physical Activity (PA) has shown benefits among the elderly population: it increases their life expectancy, reduces their mortality, maintains their physical functioning, translating into a good perception of health [8,11,12]. Despite the evidence in favor of PA, various organizations, such as the WHO, report alarming rates of sedentary lifestyle among the geriatric Spanish population [11,12]. Due to its relevance, there are several scales to measure the level of PA in older adults, with the Rapid Assessment of Physical Activity (RAPA) being one of the most widely used due to its proven high sensitivity, reliability, and specificity [14]. Sarcopenia, defined as the loss of muscle mass and strength, is a significant phenomenon of old age, due to the high impact it has on quality of life [15,16]. Due to its repercussions, it is essential to make an early diagnosis. In this context, it is worth noting the Rapid Screening tool for Sarcopenia (SARC-F), a test applied in studies for its detection due to its high reliability of 80% [15,16].

During old age, "good health" is synonymous of autonomy, which is an essential component of quality of life [1,2]. However, inexorably as age advances, there is a certain decline in the functional state that entails several consequences, among which the reduction of the self-perception of health stands out, as a reflection of this, various authors document that the perception of health of the elderly with functional losses is deficient [3,5,16]. The functional capacity can be evaluated through the degree of autonomy that the person possesses to carry out a series of Basic Activities of Daily Living (BADL), the current bibliography exposes various tools, being the Barthel Index (BI) a widely validated scale used in Spain, especially in Geriatrics [17].

## Justification and objectives

Older adults are a population group with a progressive demographic weight and with considerable importance in terms of health politics, due to the high amount of resources they require for their care [1,2]. Specifically, the loss of their autonomy, the decline in their health due to changes in their lifestyle (sedentary lifestyle, Westernization of their diet) [11,12] and the decline in their perception of health, are factors strongly linked to an increase in healthcare expenses [11,12].

Consequently, the evaluation of the self-perception of the health of the elderly acquires an important relevance, both from the clinical point of view and from the healthcare management point of view, being of help for the health professionals of the Primary Care (PC), since the knowing the perceived health of the elderly in PC will highlight their health needs and preferences, serving as support in order to plan healthcare services[18,19]. Likewise, knowing the factors positively or negatively linked to their self-perception of health could be an excellent starting point for designing appropriate strategies in this group, from tactical planning (programs) to strategic planning (health plans) [7,10].

Several authors have investigated the factors associated with the perception of health in the elderly, finding family/social relationships, general health, finances, housing or functional status to be highlighted [6,7], however , there are few articles in which their relationship with adherence to MD, sarcopenia or PA level has been measured [15], consequently it has been decided to include them in this study to show their effects on the perception of health, in such a way that we try to contribute to fill the gap in the literature on the drivers of perceived poor and/or good health among older adults in PC.

Reviewing various works on perceived health, it has been observed that the majority agree in evaluating it using the SF-36, for this reason we have applied it, on the other hand, 4 validated scales have been added: IB, RAPA, SARC-F and MEDAS-17[ 9,12,14], to investigate more deeply into the factors linked to perceived health among the elderly, not having evidence of any previous study in which they have been applied.

The main reason that has prompted us to develop our study at the Calaceite Health Center is that to our knowledge there are no studies on self-perceived health in older adults studied at the center, nor in the Alcañiz Health Sector, nor in Aragon, in addition, there are few studies on this subject in our country: Spain. Lastly, to report that this study can serve as a precedent for future lines of research, since it will measure the impact of variables little studied up to now on the self-perception of health, an aspect that is essential to design plans to improve it later on.

The aim of this study was to find out the self-perceived state of health, adherence to the MD, the level of PA, the degree of autonomy for BADL and the probability of suffering from sarcopenia, in a sample of adults aged 65 or over in a rural Primary Care (PC) healthcare center, by completing a self-administered, online, anonymous and voluntary questionnaire, in addition to evaluating the existing relationship, if any, between the different variables collected.

# MATERIAL AND METHOD

## Type of study, setting and target population

This is a cross-sectional descriptive observational study. The center object of the work has been the Health Center (HC) of Calaceite, HC that belongs to the Health Sector of Alcañiz, a sector made up of 12 Basic Health Zones (BHZ). The target population of the study has been the population of the BHZ of Calaceite, made up of 2946 inhabitants (data extracted from the register of the National Institute of Statistics).

## Study population, sample size and selection criteria

The sample size was calculated starting from 916 inhabitants (study population), which is the population aged 65 or over in the BHZ of Calaceite, data consulted in the BDU of the Government of Aragon, with 195 subjects being the representative sample.

- Inclusion criteria: patients aged 65 or over who belonged to the Calaceite BHZ, who had received and understood the informative document, who had given written informed consent and who did not have moderate or moderate or severe cognitive impairment measured by Pfeiffer, were included in the study [18].

## Type of sampling and recruitment strategy

The type of sampling chosen was consecutive, so that all patients aged 65 or over who attended a nursing and/or medical consultation and/or demanded home care appointments in the months of recruitment were invited to participate. In order to encourage participation, informative posters of the study were placed by the HC.

## Study variables

Several variables with a proven association with the perception of health were included in the study [5-8]. The variables were collected through an "ad hoc" questionnaire, which included 5 validated scales: MEDAS-17, RAPA, IB, SARC-F and the SF-36. 37 variables were collected, grouped into 7 categories: 3 sociodemographic variables (age, gender and educational level), 6 socio-family support variables (marital status, income sufficiency, type of coexistence, period of time alone, primary care of a dependent person and weekly time dedicated to leisure), 10 clinical variables (weight, height, Body Mass Index/BMI, tobacco use, alcohol, polypharmacy, number of drugs consumed per day, taking psychotropic drugs, number of chronic diseases and consumption consultations), 3 variables linked to COVID-19 (COVID-19 infection, fear of coronavirus-19 and difficulty sleeping due to concern about suffering from COVID-19, evaluated using the Fear of Covid-19 Scale/FCV-19S or scale of fear of Covid-19), 2 lifestyle variables (adherence to the DM: evaluated using the MEDAS-17 and the PA level: measured through the RAPA), 2 functional capacity variables (autonomy for ADL measured with the IB and risk of suffering from sarcopenia through the SARC-F), health perception variables: evaluated using the Spanish version of the SF-36, its 36 items analyzed the 8 dimensions of perceived health, which are detailed later on [8,9].

## Instruments used for data collection

The methodological tool used to achieve the formulated objectives has been a self-administered online, anonymous and voluntary questionnaire, designed with Google Forms. The data obtained was transferred to an Excel database, sent to Jamovi for statistical analysis. The questionnaire was made up of 4 blocks: a first block dealt with sociodemographic, clinical, socio-family support and COVID-19-related variables, a second block to collect data on lifestyle, made up of the MEDAS-17 and RAPA [4,13,14,19], a third block to collect information on functional capacity, made up of the IB and the SARC-F ([16-19]) and a fourth block to collect information on the perception of health, made up of the validated questionnaire SF-36 [8-10,20-22].

- MEDAS-17: served to measure adherence to the MD. Its 17 items refer to the consumption of foods of the MD pattern in adequate amounts, the use of culinary techniques, and the intake of wine ([13]). The MEDAS-17 awards 1 point to each item that reflects adherence to the MD, ranging from 0 to 17, with the following qualitative assessment: low adherence to the MD: 0-6; low-moderate adherence: 7-8; moderate-high adherence: 9-10; high adherence: 11-17 points [13].

- RAPA: used to assess the level of PA. It is made up of 9 items, 7 of which measure whether the recommendation to do 30 minutes or more of moderate PA a day, 5 or more days a week, is followed. It has a result from 1 to 7, if it is less than 6: the PA level is below the recommended level, with the following categories: sedentary: 1 point; little active: 2; moderately active: 3-5 points; active: 6-7 points [14].

-IB: it was used to assess the person's ability to perform 10 BADL that are considered essential, achieving an estimate of the degree of independence of him ([19]). Your score ranges from 0 to 100 points. A degree of dependency is established according to the score obtained, with the cut-off points being: total dependency: <20; severe: 20-45; moderate: 45-60; mild: 65-100; independence: 100 points [10,19].

- SARC-F: served to assess the risk of sarcopenia. It asks about the degree of difficulty that the elderly have to perform 4 functional activities (strength to carry objects, walking, getting up from a chair, climbing stairs) and considers the number of falls suffered by the subject during the past year [19]. The final score on the scale ranges from 0 to 10 points, where the cut-off value established to define the risk of sarcopenia is a score equal to or greater than 4 points [19].

- SF-36: it was used to evaluate the self-perception of the health of the sample, the Spanish version of Alonso J et al. which has high validity, reproducibility and utility for the elderly [20]. Said questionnaire has 36 items that detect positive and negative aspects of physical health and emotional state. Their responses are presented on a Likert-type scale with different intensity and frequency depending on each item. Its 36 items evaluate 8 dimensions of perceived health: Physical Function (PF), Physical Role (PR), Body Pain (BP), General Health (GH), Vitality (V), Social Function (SF), Emotional Role (ER) and Mental Health (MH), additionally includes 1 Health Transition (HT) item that assesses changes in the general state of health compared to the previous year. For each dimension of the SF-36, the items were coded, added and transformed into a range from 0 (worst state of health) to 100 (best state of health) according to the SF-36 algorithm [8,9,20]. The 8 subscales were added in the Physical Component Summary (PCS) and in the Mental Component Summary (MCS) using the

normalized weighted values published by Alonso J et al. (Spanish pesos published for said components) [9,23]. The PCS grouped the dimensions PF, PR, BP, GH and the MCS grouped the V, SF, ER and MH [9,21,22]. The scores obtained in the sample were compared with the reference population values for the Spanish adult population > 60 years of age published by López García E et al. and the results of both standardized components were compared with the values of the reference population for the Spanish population by Vilagut G et al [21,22].

### Statistic analysis

For the analysis and processing of the data collected in the study, the Excel and Jamovi programs have been used. A descriptive analysis of the data has been carried out: the qualitative variables have been presented through the frequency distribution of the percentages of each category. Quantitative variables were explored using the Kolmogorov-Smirnov conformity test (goodness-of-fit test for a normal distribution) and indicators of central tendency (mean and median) and indicators of dispersion (standard deviation and percentiles) have been given. The association between the self-perception of health and the variables studied has been investigated using hypothesis contrast tests, with comparison of proportions when both variables were qualitative (Chi square, Fisher's exact test), with comparisons of means when one of the variables was qualitative. was quantitative (Student's t test, ANOVA, and if they did not follow a normal distribution, the Mann-Whitney U test or the Kruskall-Wallis test was used) and by bivariate correlations (Pearson's correlation coefficient) when both variables were quantitative . The effects have been considered significant if $p<0.05$, and the p values have been bilateral. In the case of multiple comparisons of proportions, the Bonferroni correction has been applied to the p-value.

### Ethical-legal considerations

Ethical approval of the study was granted by the Research Ethics Committee of the Autonomous Community of Aragon (CEICA) reflected in its act no. 06/2022. In the initial phase of this study, the principal investigator requested written authorization from the coordinators of the Calaceite HC to be able to apply it to the center's patients. In compliance with Law 41/2002, of November 14th, basic regulation of the patient, informed consent was requested from all recruited patients, In addition, in accordance with the provisions of Organic Law 3/2018, of December 5th, Protection of Personal Data and Guarantee of Digital Rights and according to the General Data Protection Regulation, of April 27th, 2016, the names of the participants are not mentioned in the study, or any identifying data ensuring their confidentiality.

## RESULTS

### Descriptive analysis: sociodemographic, socio-family support, clinical variables, linked to COVID-19, lifestyle and functional capacity

- Sociodemographic variables: the sample consisted of a total of 142 older adults, with a mean age of 75.85 years (SD: 10.20), with an age range of 65 to 102 years. Regarding gender, 59.2% (n=84) were women. In relation to their academic level, the majority said they had primary studies (71.8%).

- Socio-family support variables: in relation to marital status, the majority of subjects were married (57.7%). Regarding their economic situation, 59.2% indicated that it was difficult for them to reach the end of the month. Regarding their modality of coexistence, 45.8% of the sample lived with their partner, as opposed to 21.1% who lived alone, indicating the majority of being alone at times (45.1%), compared to 12.0% who stated that they were alone all the time. day. Regarding the care of a dependent person, the vast majority of participants indicated that they were not caregivers (88.0%). Regarding their weekly time dedicated to leisure, the older adults who stated in the survey that they had less than 7 hours of leisure per week (28.9%) prevailed.

- Clinical variables: the mean BMI of the subjects was 26.93 (SD: 3.56), indicative of normal weight, very close to the overweight cut-off limit for the elderly population, with 48.6% of the subjects falling into the categories of overweight or obesity. Regarding toxic habits, more than half said they had not smoked (54.2%) and had not drunk alcohol (54.9%). Note that 58.5% of the subjects were polymedicated. Regarding the taking of psychoactive drugs, 47.9% said they used them, compared to 47.2% who did not. More than half of the subjects suffered between 1 and 2 or more than 2 chronic diseases (68.3%), however, 16.2% did not know how many they suffered. Regarding the consumption of consultations, the sample presented an average of 9.03 (SD: 11.40) contacts with PC professionals in the last year, on the other hand, the participants said they went to the Hospital Emergency Department (ED) an average of 1.83 (SD: 3.31) times during the last year.

- Variables linked to COVID-19: according to the COVID-19 infection, more than half of the subjects said they had not suffered from it or currently suffer from it (59.2%). Regarding the question asked about their fear of COVID-19, the responses provided show that more than half of the respondents (66.2%) stated that they were not very afraid of the SARS-CoV-2 virus. Regarding the question about whether they had difficulty sleeping due to concern about suffering from the coronavirus, the majority of older adults (77.5%) indicated that they did not suffer from said difficulty.

- Lifestyle variables: the mean score obtained by the respondents in the MEDAS-17 was 10.39 (SD: 2.74), indicative of moderate-high adherence to the MD. The classification of adherence to the MD followed by the participants showed that the majority had high adherence to the MD pattern (48.6%), followed by 28.2% who showed moderate-high adherence, compared to 8.5% of older adults whose result in the MEDAS-17 it indicated low adherence. It should be noted that statistically significant differences were detected by gender, with women demonstrating greater adherence to MD than men (p=0.003), however, no statistically significant differences were observed by age. Secondly, according to the RAPA, the subjects overall proved to be moderately active with a mean of 3.43 (SD: 2.17). The cataloging of the level of PA evaluated through the RAPA showed that the majority of the respondents were moderately active (35.9%), compared to 27.5% who were sedentary. It should be noted that 22.5% of the older adults surveyed showed to be active on said scale, thus complying with the recommended PA level.

- Functional capacity variables: the mean score obtained by the older adults surveyed in the IB was 83.56 (SD: 29.41), indicative that they had mild dependence to perform BADL. After carrying out their cataloging, the majority of the participants (54.9%) proved to be independent, compared to only 7.7% who had total dependence to carry out the BADL. On the other hand, regarding the risk of sarcopenia, the mean score

obtained by the sample in the SARC-F was 2.19 (SD: 2.78), indicating that they had a low risk of suffering from sarcopenia. The SARC-F cataloging showed that the majority of the subjects surveyed had a low probability of presenting said condition (75.4%).

**Descriptive analysis: perception of the health of the sample**

- Health perception variables: regarding the self-perception of the health of the elderly evaluated by the SF-36, note that the subjects reported the highest scores in the SF, ER and SM subscales, and the lowest in TS and pcs. In the PR, SF and ER subscales, it was observed that the percentage of subjects who answered having an extreme score (0 or 100) is higher in general and also by gender. All the subscales had a range of 0-100, noting that the median score exceeded 50 in 6 of the 8 subscales (PF, PR, BP, SF, ER and MH), which is indicative that the distribution as a whole is focuses on high values of these subscales. By gender, the mean values of the SF-36 were higher in men than in women, as is the case in the reference population, except in the PCS and MCS. The average score in the 8 subscales, in TS, in PCS and MCS was lower in the sample than in the reference population, in addition, the results by gender reflect that both women and men had lower scores in all subscales than those observed. in the reference population. The mean value obtained from the PCS was 39.3 (SD: 11.2) and that of the MCS was 44.5 (SD: 11.9), both values being below the reference population; however, women presented higher scores than men. males. It should be noted that lower scores were observed in the PCS than in the MCS, as occurs in the reference population ([21,22]) (Table 1).

**Table 1: Mean SF-36 score of the sample globally and by gender**

| Subscales | Mean (SD) | Median (IQR) | Interval | % p. upper limit (100) | % p. lower limit (0) |
|---|---|---|---|---|---|
| General | | | | | |
| PF | 56.3 (31.8) | 62.5 (53.8) | 0-100 | 1.4 | 12.7 |
| PR | 53.7 (42.8) | 75.0 (100.0) | 0-100 | 33.8 | 33.1 |
| BP | 61.0 (25.9) | 57.5 (40.6) | 0-100 | 14.1 | 0.0 |
| GH | 43.3 (24.8) | 45.00 (38.8) | 0-100 | 0.0 | 4.9 |
| V | 51.7 (20.7) | 50.00 (35.0) | 0-100 | 1.4 | 0.7 |
| SF | 68.1 (27.3) | 75.0 (37.5) | 0-100 | 23.9 | 2.1 |
| ER | 64.3 (43.8) | 100.0 (100.0) | 0-100 | 54.2 | 28.2 |
| MH | 63.2 (17.6) | 60.0 (30.0) | 0-100 | 1.4 | 0.0 |
| TS | 36.9 (21.4) | 50.0 (25.0) | 0-100 | 1.4 | 12.7 |
| PSC | 39.3 (11.2) | 41.3 (19.6) | 0-100 | 0.0 | 0.0 |
| MCS | 44.5 (11.9) | 47.1 (18.9) | 0-100 | 0.0 | 0.0 |
| Males | | | | | |
| PF | 57.0 (33.6) | 67.5 (55.0) | 0-100 | 3.4 | 12.1 |
| PR | 56.9 (43.9) | 75.0 (100.0) | 0-100 | 39.7 | 32.8 |
| BP | 63.7 (27.3) | 67.5 (45.0) | 0-100 | 17.2 | 0.0 |
| GH | 44.2 (25.5) | 50.0 (42.5) | 0-100 | 0.0 | 1.7 |
| V | 52.5 (23.9) | 52.5 (35.0) | 0-100 | 3.4 | 1.7 |
| SF | 69.6 (26.1) | 75.0 (37.5) | 0-100 | 24.1 | 0.0 |
| ER | 69.0 (44.1) | 100.0 (100.0) | 0-100 | 62.1 | 27.6 |
| VH | 66.6 (18.5) | 68.0 (32.0) | 0-100 | 3.4 | 0.0 |
| TS | 39.2 (23.9) | 50.0 (25.0) | 0-100 | 3.4 | 15.5 |

| | | | | | |
|---|---|---|---|---|---|
| PSC | 39.4 (11.5) | 41.3 (20.0) | 0-100 | 0.0 | 0.0 |
| MCS | 39.2 (11.1) | 41.2 (19.0) | 0-100 | 0.0 | 0.0 |
| Females | | | | | |
| PF | 55.8 (30.7) | 60.0 (36.3) | 0-100 | 0.0 | 13.1 |
| PR | 51.5 (42.2) | 75.0 (100.0) | 0-100 | 29.8 | 33.3 |
| BP | 59.2 (24.9) | 57.5 (43.1) | 0-100 | 11.9 | 0.0 |
| GH | 42.7 (24.5) | 45.0 (36.3) | 0-100 | 0.0 | 7.1 |
| V | 51.1 (18.3) | 50.0 (26.3) | 0-100 | 0.0 | 0.0 |
| SF | 67.1 (28.2) | 62.5 (37.5) | 0-100 | 23.8 | 3.6 |
| ER | 61.1 (43.5) | 66.7 (100.0) | 0-100 | 48.8 | 28.6 |
| VH | 60.9 (16.7) | 60.0 (28.0) | 0-100 | 0.0 | 0.0 |
| TS | 35.4 (19.5) | 25.0 (25.0) | 0-100 | 0.0 | 10.7 |
| PSC | 46.1 (11.7) | 49.6 (18.7) | 0-100 | 0.0 | 0.0 |
| MCS | 43.4 (11.9) | 45.9 (20.8) | 0-100 | 0.0 | 0.0 |

% p. upper limit: Percentage with maximum score. % p. lower limit: Percentage with minimum score. SD: Standard Deviation. IQR: interquartile range. PSC: Physical Summary Component. MCS: Mental Component Summary.

Table 2 shows that as age increases, the mean score decreases in all subscales as observed in the reference population, with some exceptions, with the greatest decrease in the FF and RF subscales and the lowest in SF and MCS. (22,23). In the FF subscale, the difference between the older and younger age groups was 57.9 points in males and 55.6 in females. In the RF subscale, the differences were also important: 29.2 and 40.6 points in men and women, respectively. However, it was in the SM subscale that the smallest differences were seen, the difference between the oldest and youngest groups was 5.8 points in women, with a 1-point increase being observed even in men. Note that a difference of 5 points in any subscale is considered clinically and socially relevant. The mean scores of the men and women participating in this study in the 8 subscales of the SF-36, in TS and in the summary components were lower than those observed in the reference population, with exceptions that are detailed in bold, being more frequent in women (PF, PR, BP, SF and PCS) than in men (BP, SF and MCS) [21,22].

**Table 2: Distribution of SF-36 scores of the sample by age and gender.**

| AGE (years) | 65-69 (n=57) | | 70-74 (n=17) | | 75-79 (n=21) | | 80-84 (n=15) | | ≥ 85 (n=32) | |
|---|---|---|---|---|---|---|---|---|---|---|
| **GENDER** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** |
| PF (Mean) | 76.2 | **77.1** | 67.0 | **70.0** | 57.1 | 57.5 | 46.3 | 32.1 | 18.3 | 21.50 |
| PR (Mean) | 62.5 | 66.9 | 70.0 | 54.2 | 67.9 | **69.6** | 56.3 | 14.3 | 33.3 | 26.3 |
| BP (Mean) | 67.1 | **66.9** | 58.5 | 56.3 | **84.3** | **66.6** | 55.9 | 42.9 | 51.5 | 49.5 |
| GH (Mean) | 52.7 | 51.3 | 44.0 | 44.2 | 41.4 | 49.3 | 41.3 | 32.5 | 29.6 | 27.5 |
| V (Mean) | 57.5 | 58.1 | 59.0 | 55.4 | 58.6 | 50.7 | 54.4 | 42.1 | 34.2 | 41.0 |
| SF (Mean) | 75.0 | 73.8 | 62.50 | 67.7 | 78.6 | **77.7** | 71.9 | 55.4 | 54.2 | 53.1 |
| ER (Mean) | 69.2 | 67.7 | 73.3 | 63.9 | 85.7 | 73.8 | 83.3 | 52.4 | 47.2 | 43.3 |
| MH (Mean) | 63.7 | 63.0 | 60.8 | 62.0 | **76.0** | 61.7 | **74.5** | 58.9 | 64.7 | 57.2 |
| TS (Mean) | 42.3 | 39.5 | 50.0 | 35.4 | 39.3 | 39.3 | 40.6 | 32.1 | 27.1 | 27.5 |
| PCS (Mean) | 45.3 | **45.9** | 42.2 | 41.5 | 40.5 | **42.1** | 34.2 | 28.8 | 28.5 | 29.1 |
| MCS (Mean) | 44.1 | 43.4 | 43.9 | 43.4 | **51.8** | 45.5 | **52.6** | 44.0 | 43.8 | 41.9 |

The PCS grouped the dimensions PF, PR, BP, GH and the MCS grouped the V, SF, ER and MH ([9,21])

**Results of associations with self-perception of health**

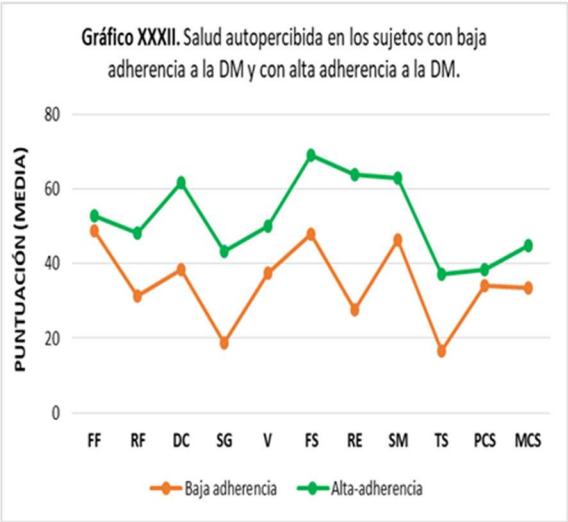
- Association between self-perceived health and adherence to the MD: statistically significant differences were found in all dimensions of the SF except PF, SF and PCS. The sample with low-moderate adherence showed the highest scores in all the subscales except in the MCS, while the subjects with low adherence demonstrated lower scores in all the SF-36 scales.

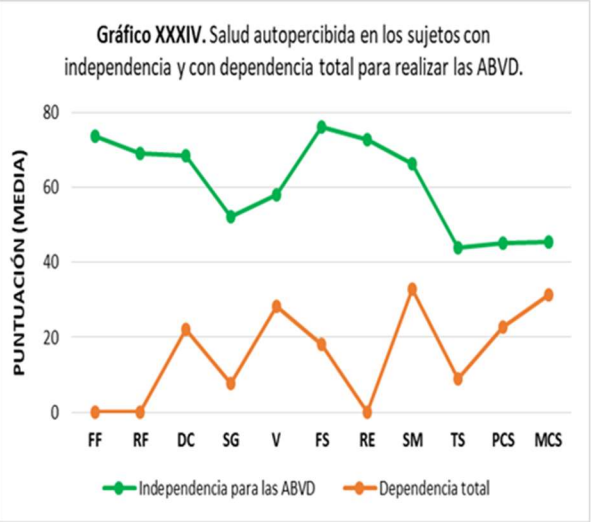
- Relationship between perception of health and PA level: active subjects presented the best scores in the PF, PR, BP, GH, V, TS and PCS subscales, and moderately active participants showed better scores in PF, ER, MH and MCS. On the contrary, sedentary adults presented lower scores in all dimensions, especially in PF, PR, GH and TS. It should be noted that statistically significant differences were seen in all the SF-36 subscales, in TS, in PCS and MCS depending on the level of PA ($p<0.001$).

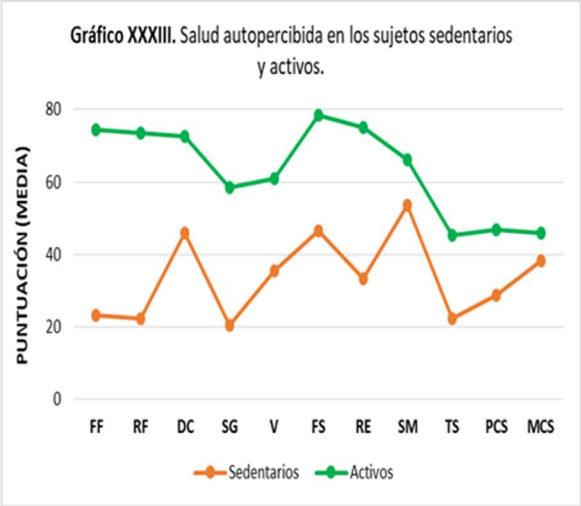
- Association between self-perceived health and autonomy for BADL: as in the RAPA, statistically significant differences were observed in all dimensions of the SF-36 according to autonomy to carry out BADL. The independent older adults showed the best scores, except in ER and MCS, while the dependent subjects had lower scores.

- Relationship between the perception of health and the risk of presenting sarcopenia: statistically significant differences were found in all the subscales, in TS, PCS and MCS according to the risk of sarcopenia. Subjects with a low probability of sarcopenia demonstrated higher scores in all dimensions of the SF-36, with greater differences being observed in PF, PR, GH, SF, and ER.

Graphs 1, 2, 3 and 4 show a better perception of health in subjects with high adherence, active, independent and with a low risk of sarcopenia





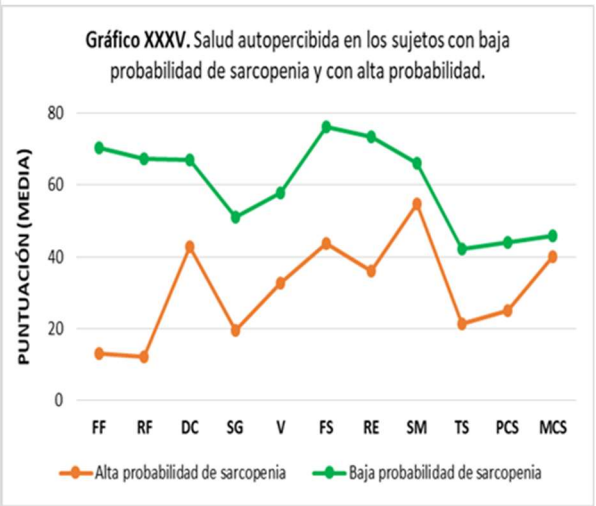




**Table 3: Relationship between adherence to the MD and the level of PA.**

| | Adherencia a la MD, n (%) | | | | | |
|---|---|---|---|---|---|---|
| Nivel de PA, n (%) | Low | Low-moder | Moder-high | High | Total | p-valor |
| Sedentary | 6 (50.0) | 3 (14.3) | 10 (25.0) | 20 (29.0) | 39 (22.5) | 0.021 |
| Low activity | 4 (33.3) | 4 (19.0) | 4 (10.0) | 8 (11.6) | 20 (14.1) | |
| Moder. Activity | 2 (16.7) | 8 (38.1) | 11 (27.5) | 30 (43.5) | 51 (35.9) | |
| High activity | 0 (0.0) | 6 (28.6) | 15 (37.5) | 11 (15.9) | 32 (22.5) | |

- Relationship between autonomy for BADL and risk of sarcopenia: the observed relationship was statistically significant (p<0.001). The subjects evaluated with a low probability of suffering from sarcopenia showed to be independent for BADL, compared to those with a high risk who were more dependent (Table 4).

**Table 4: Relationship between sarcopenia and autonomy for BADL**

| | Riesgo de presentar sarcopenia, N (%) | | | |
|---|---|---|---|---|
| Autonomy BADL, n (%) | High probability | Low probability | Total | p-valor |
| | 11 (31.4) | 75 (0.0) | 78 (7.7) | <0.001 |
| | 9 (25.7) | 30 (0.9) | 38 (7.0) | |
| | 4 (11.4) | 1 (0.9) | 5 (3.5) | |
| | 8 (22.9) | 1 (28.0) | 10 (26.8) | |
| | 3 (8.6) | 0 (70.1) | 11 (54.9) | |

# DISCUSSION

The present study has been carried out on a sample of 142 older adults belonging to the ZBS of Calaceite. Regarding adherence to the MD measured through the MEDAS-17, its cataloging showed high adherence in the sample, similar to two studies carried out by Tárraga et al., in Spanish adults where moderate-high adherence was observed, however, superior to that seen in other works, such as that of Álvarez et al. developed in 6874 older Spanish adults, who reported low-moderate adherence to MD [24,25]. The greater availability of own resources: fruits and vegetables, present in the fields of the rural environment from which the subjects come, could support our results.

In relation to the level of PA evaluated in the participants, emphasize that the degree of PA obtained is higher than that found in previous research [7,11,18].

Regarding the good autonomy of the sample, it is striking, given its high mean age (75.85 years), an aspect that could be linked to the type of recruitment used. Regarding sarcopenia, the SARC-F envisioned a low risk of presenting it, with said frequency being lower than that reported in previous investigations [18,19,26,27].

Regarding our objective of "assessing self-perceived health using the SF-36", it can be considered that the self-perceived health of the participants is low, since, comparing the mean values of the SF-36 subscales, in addition to TS, PCS and MCS, with the values of the reference population, all of them obtained a lower score [21,22]. Of these subscales, the best perception was manifested in the SF, similar to that endorsed in previous works [21,28], this result can be supported by the fact that regardless of the state of health of the subjects analyzed, it did not hinder them in any way. in a relevant way the social performance with family, friends, neighbors... reaffirming the importance that older adults attribute to their role in society. Thus, we consider that SF should be a dimension to be taken into account when designing plans to increase the quality of life in this sector of the population[24]. On the other hand, it should be noted that the lowest perception of health was evidenced in the SG subscale followed by V, an aspect also corroborated by various authors[24,28] and this is not a surprising finding since in older people it is common to accumulation of ailments that contribute to their expressing a low perception of health, since when manifesting it, they take into account their current health condition (SG)([28]). The low self-perception of OS is a fact to keep in mind, since previous studies support that negative OS predicts mortality [28]. After the FS, the dimensions of RE and SM were in which we obtained the highest scores, results that agree with various past investigations which postulate that from the age of 60 the negative emotional experience is less frequent, that is, they express more joy. or gratitude than sadness [8,24].

Men had higher scores than women on all the SF-36 scales, an aspect that also coincides with studies carried out on samples of the elderly and the general population [21]. Also consistent with the existing literature in this field, the fact that the decrease in scores has been more accentuated on the physical scales and less marked on the mental ones, data that could reflect the loss of functional capacity as a result of aging [21]. When analyzing the self-perception of health according to lifestyle, our study showed that lower adherence to DM was significantly associated with a worse perception of health ($p<0.05$), as reflected in previous studies carried out mostly among adolescents [4,8]. On the other hand, a PA level in accordance with the recommendations was significantly associated with better self-perceived health, detecting notable improvements in the dimensions of FF and RF, results in line with those endorsed by other authors [15]. All of the above informs the need to improve the lifestyle of our elderly, in order to improve their perception of health. After evaluating the relationship between autonomy for BADL and self-perceived health, it was observed that a good perception of health was linked to greater independence and vice versa, and there are studies in the literature that also corroborate these results [15]. When analyzing sarcopenia vs. health perception, this work reflected a significantly better perceived health among subjects with a low risk of suffering from this condition, a result that is consistent with other studies on the same subject and in a similar population [15], reaffirming the importance of its detection. and its early approach [27]. Regarding the objective: "to evaluate the relationship between

adherence to the DM and PA, and between autonomy for BADL and sarcopenia" our work revealed that a greater adherence to the DM was significantly associated with a better degree of PA and that a low risk of sarcopenia was associated with greater independence, results endorsed by other authors [27] and expected given the functional limitation generated by sarcopenia [15,19].

### Limitations, strengths, suggestions, future lines and practical implications

The main limitation of the aforementioned study is that, based on its cross-sectional design, it does not allow cause-effect relationships to be established, and the sample was made up of geriatric subjects from a HC, so its results cannot be extrapolated. However, it was not designed to be extrapolated, but to study the influence of variables on the perception of health not investigated so far by other authors. In relation to its strengths, it should be noted that validated scales were used to collect the data, allowing the results to be interpreted properly and to be able to compare with other investigations. Based on the repercussions of a low perception of health in the elderly, our results may be a good starting point to try: "add life to their years, instead of years to their lives."

## CONCLUSIONS

According to the results obtained, it is concluded that: the perception of the health of the older adults surveyed is worse than the general population, specially self-perceived health being lower in the female sex. It has been seen that with the advancement of the years the perception of health is significantly reduced. The lifestyle and eating habits of the sample are healthy, since they have a normal weight and overall show a moderate-high adherence to the MD pattern, together with a PA level that reflects being moderately active. Despite their longevity, the functional capacity of the sample is preserved since they are independent in performing BADL and present a low risk of sarcopenia. The study describes that the perception of health is significantly better in respondents with a healthy lifestyle and good functional capacity. The elderly recruited with high adherence to the Mediterranean pattern demonstrated a significantly better level of PA, similarly, the active subjects had a significantly lower probability of suffering from sarcopenia.

## REFERENCES

1, Alvarado García AM. Análisis del concepto de envejecimiento. Gerokomos. 2014;25(2):57-62. https://dx.doi.org/10.4321/S1134-928X2014000200002
2. Martínez Pérez TJ, González Aragón CM, Castellón León G, González Aguiar B. El envejecimiento, la vejez y la calidad de vida: ¿éxito o dificultad? Rev Finlay. 2018 Feb;8(1):59-65. http://scielo.sld.cu/pdf/rf/v8n1/rf07108.pdf
3. Bustos Vázquez E, Fernández Niño JA. Autopercepción de la salud, presencia de comorbilidades y depresión en adultos mayores mexicanos: propuesta y validación de un marco conceptual simple. Biomédica. 2017;37(1):92-103.
4. Barrios Vicedo R, Navarrete Muñoz EM, García de la Hera M, González Palacios S, Valera Gran D, Checa Sevilla JF, Giménez Monzo D, et al. Una menor adherencia a la dieta mediterránea se asocia a una peor salud auto-percibida en población universitaria. Nutr Hosp. 2015;31(2):785-792.

5. Arévalo Avecillas DX, Game Varas CI, Padilla Lozano CP. Calidad de vida en adultos mayores profesionales de Ecuador. Rev Venez de Gerencia. 2021;26(93):414-431. https://www.redalyc.org/journal/290/29066223027/html/
6. Cai J, Coyte PC, Zhao H. Determinants of and socio-economic disparities in selfrated health in China. Int J Equity Health. 2017 Jan;16(1):7-27. https://doi.org/10.1186/s12939-016-0496-4
7. Rosales Rodríguez RC, García Diaz RC, Quiñones Macias E. Estilo de vida y autopercepción sobre salud mental en el adulto mayor. MEDISAN. 2014 Ene;18(1):61-67. http://scielo.sld.cu/pdf/san/v18n1/san09114.pdf
8. Cartujo Redondo A, de Mateo Silleras B. Percepción de salud en función del estilo de vida en estudiantes universitarios [Trabajo Fin de Grado en Nutrición Humana y Dietética]. Valladolid: Uva: Facultad de Medicina; 2017:1-53.
9. Vilagut G, Ferrer M, Rajmil L, Rebollo P, Permanyer Miralda G, Quintana JM, Santed R, et al. El Cuestionario de Salud SF-36 español: una década de experiencia y nuevos desarrollos. Gac Sanit. 2005 Abr;19(2):135-150. https://scielo.isciii.es/pdf/gs/v19n2/revision1.pdf
10. Mosquera Nogueira J, Rodríguez Mínguez E. La medición de la calidad de vida en Atención Primaria. Cad Aten Primaria. 2020;26(3):23-28.
11. López Trigo JA, Martínez Álvarez JR, Ramos Cordero P, Redondo del Río P, Carmina Martín A, de Mateos Silleras B, López Mongil R, et al. Guía de buena práctica clínica en Geriatría: alimentación, nutrición e hidratación en adultos mayores. Madrid: Sociedad Española de Geriatría y Gerontología; 2015:1-56.
12. Zaragoza Martí A, Ferrer Cascales R, Cabañero Martínez MJ, Hurtado Sánchez JA, Laguna Pérez A. Adherencia a la dieta mediterránea y su relación con el estado nutricional en personas mayores. Nutr Hosp. 2015 Abr;31(4):1667-1674. https://scielo.isciii.es/pdf/nh/v31n4/29originalancianos03.pdf
13. Álvarez Álvarez I, Martínez González MA, Sánchez Tainta A, Corella D, et al. Dieta mediterránea hipocalórica y factores de riesgo cardiovascular: análisis transversal de PREDIMED-Plus. Rev Esp Cardiol. 2019 Nov;72(11):925-934.
14. Pérez JC, Bustamante C, Campos S, Sánchez H, Beltrán A, Medina M. Validación de la Escala Rapid Assessment of Physical Activity (RAPA) en población chilena adulta consultora en Atención Primaria. Aquichán. 2015 Dic;15(4):486-498. http://www.scielo.org.co/pdf/aqui/v15n4/v15n4a04.pdf
15. Casals C, Suárez Cadenas E, Estébanez Carvajal FM, Aguilar Trujillo MP, Jiménez Arcos MM, Vázquez Sánchez MA. Relación entre calidad de vida, actividad física, alimentación y control glucémico con la sarcopenia de adultos mayores con diabetes mellitus tipo 2. Nutr Hosp. 2017 Oct;34(5):1198-1204.
16. Parra Rodríguez L, Szlejf C, García González AI, Malmstrom TK, Cruz Arenas E, Rosas Carrasco O. Cross-Cultural Adaptation and Validation of the Spanish-Language Version of the SARC-F to Assess Sarcopenia in Mexican Community-Dwelling Older Adults. J Am Med Dir Assoc. 2016 Dec;17(12):1142-1146.
17. Martínez Martín P, Fernández Mayoralas G, Frades Payo B, Rojo Pérez F, Petidier R, Rodríguez Rodríguez V, Forjaz MJ, et al. Validación de la Escala de Independencia Funcional. Gac Sanit. 2009 Ene-Feb;23(1):49-54. https://doi.org/10.1016/j.gaceta.2008.06.007
18. Documentos de consenso. Valoración nutricional en el anciano. Recomendaciones prácticas de los expertos en geriatría y nutrición [Internet]. Sociedad Española de Geriatría y Gerontología (SEGG), Sociedad Española de Nutrición Parenteral y Enteral (SENPE).
19. Chavarro Carvajal DA, Alberto Heredia R. Escalas de uso frecuente en geriatría. Pontificia Universidad Javeriana Instituto de Envejecimiento:1-50.

20. Alonso J, Prieto L, Antonio JM. La versión española del SF-36 Health Survey (Cuestionario de Salud SF-36): un instrumento para la medida de los resultados clínicos. Med Clin (Barc). 1995 May;104(20):771-776. https://pubmed.ncbi.nlm.nih.gov/7783470/
21. López García E, Banegas JR, Pérez Regadera AG, Gutiérrez Fisac JL. Valores de referencia de la versión española del Cuestionario de Salud SF-36 en población adulta de más de 60 años. Med Clin (Barc). 2003;120(15):568-573.
22. Vilagut G, Valderas JM, Ferrer M, Garin O, López García E, Alonso J. Interpretación de los cuestionarios de salud SF-36 y SF-12 en España: componentes físico y mental. Med Clin (Barc). 2008;130(19):726-736.
23. Alonso J, Regidor E, Barrio G, Prieto L, Rodríguez C, de la Fuente L. Valores poblacionales de referencia de la versión española del Cuestionario de Salud SF-36. Med Clin (Barc). 1998 Oct;111(11):410-416.
24. Barceló Reyna R. Utilización del Cuestionario de Salud SF-36 en personas mayores. Revisión sistemática. Ansiedad y Estrés. 2021;27:95-102. https://www.ansiedadyestres.es/sites/default/files/rev/2021/anyes2021a13.pdf
25. Tárraga López PJ, Panisello Royo JM, Carbayo Herencia JA, Carro A, Rosich N, Panisello M, et al. Cambios observados en la adherencia a la dieta mediterránea en una población española durante el confinamiento debido a la pandemia ocasionada por el SARS-CoV-2. Nutr Hosp. 2021 Feb;38(1):109-120. https://scielo.isciii.es/pdf/nh/v38n1/0212-1611-nh-38-1-109.pdf
26. Patino Alonso MC, Recio Rodríguez JI, Magdalena Belio JF, Colominas Garrido R, Lema-Bartolomé J, Gómez Arranz A, et al; EVIDENT Group. Factors associated with adherence to the Mediterranean diet in the adult population. J Acad Nutr Diet. 2014;114(4):583-589.
27. Guillamón Escudero C, Diago Galmés A, Tenías-Burillo JM, Soriano JM, Fernández-Garrido JJ. Prevalence of Sarcopenia in Community-Dwelling Older Adults in Valencia, Spain. Int J Environ Res Public Health. 2020 Dec;17(23):9130. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7730689/
28. Etxeberria I, Urdaneta E, Galdona N. Factors associated with health-related quality of life (HRQoL): differential patterns depending on age. Qual Life Res. 2019 Aug;28(8):2221-2231.

ISSN 1695-6141